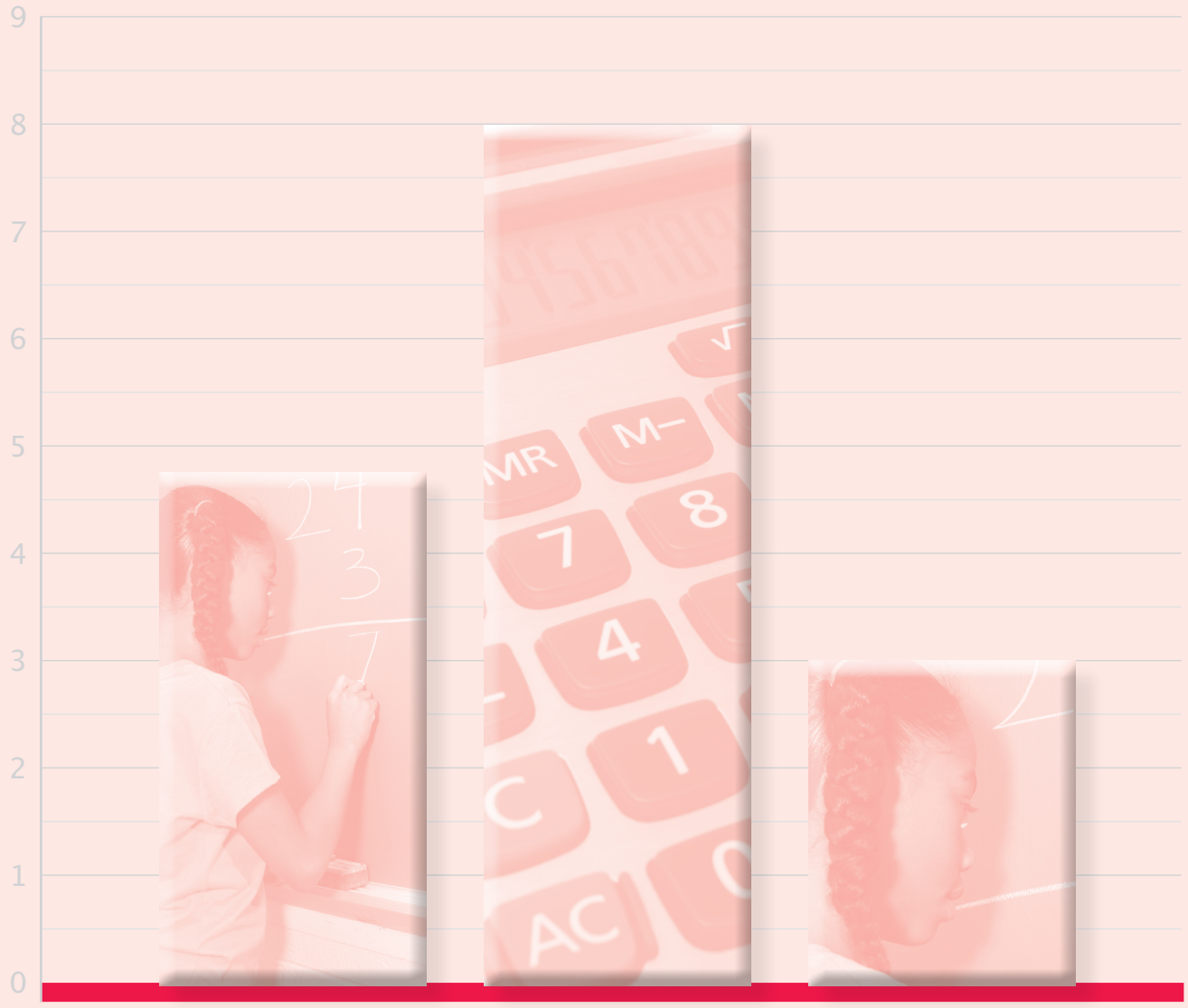
4th
5th
6th
7th
8th

Grade 6

meap™
Michigan Educational Assessment Program

Item Descriptors



MATHEMATICS

FALL 2011

MICHIGAN STATE BOARD OF EDUCATION
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NOTE: For each item listed throughout this booklet, the first statement is a summary of the Michigan Grade Level Content Expectation (GLCE) and the second statement is the descriptor for the item's stem or question.

Students were instructed to read the directions below silently as the test administrator read them aloud.

PART 1

DIRECTIONS:

In this part, you will answer multiple-choice mathematics questions. Some questions will ask you to view a picture, chart, or other mathematics-related information. Use that information with what you know to answer the question. You may **NOT** use a calculator for this part of the test.

You must mark all of your answers in Part 1 of your **Answer Document** with a No. 2 pencil. You may underline, highlight, or write in this test booklet to help you, but nothing in this test booklet will be scored. No additional paper may be used.

Mark only one answer for each question. Completely fill in the corresponding circle on your **Answer Document**. If you erase an answer, be sure to erase completely. Remember that if you skip a question in the test booklet, you need to skip the answer space for that question on the **Answer Document**. If you are not sure of an answer, mark your **best** choice.

A sample question is provided for you below.

Sample Multiple-Choice Question:

Marty wants to put 75 CDs into cases. Each case holds exactly 8 CDs. What is the **least** number of cases that Marty will need to hold all his CDs?

A 8

B 9

C 10

D 11

For this sample question, the correct answer is **C**. Circle **C** is filled in for the sample question on your **Answer Document**.

Once you have reached the word **STOP** in your test booklet, do **NOT** go on to the next page. If you finish early, you may go back and check your work in Part 1 of the test **ONLY**. Check to make sure that you have answered every question. Do **NOT** look at any other part of the test.

NOTE: The directions for Part 2 are the same as the above instructions, but with calculators allowed.

1 **N.MR.05.01:** Understand the meaning of division of whole numbers.

Use division to find the greatest number of teams of players.

A fewer than correct number of teams

B correct

C remainder greater than 0.5, rounded up despite context

D greater than correct number of teams

2 **N.MR.05.01:** Understand the meaning of division of whole numbers.

Determine the equivalent expression of a divided by b.

A a – b

B b – a

C correct

D b/a

3 **N.MR.05.03:** Write mathematical statements involving division.

Identify the operation in the contextualized setting.

A multiplication

B correct

C subtraction

D addition

4 **N.MR.05.03:** Write mathematical statements involving division.

Identify the operation in the contextualized setting.

A multiplication

B correct

C subtraction

D addition

5 **N.FL.05.04:** Multiply a multi-digit number by a 2-digit number.

Multiply the 3-digit number by the 2-digit number.

A incorrect product

B incorrect product

C incorrect product

D correct

6 **N.FL.05.04:** Multiply a multi-digit number by a 2-digit number.

Multiply the 4-digit number by the 2-digit number.

A incorrect product

B incorrect product

C correct

D incorrect product

7 **M.UN.05.04:** Convert measurements within a given system.

Convert given pounds to ounces.

A correct

B 1 pound = 12 ounces

C 1 pound = 10 ounces

D 1 pound = 4 ounces

8 **M.UN.05.04:** Convert measurements within a given system.

Convert milligrams to grams, given 1 gram = 1,000 milligrams.

A 1/100 correct number of grams

B 1/10 correct number of grams

C correct

D 10 times correct number of grams

9 **N.FL.05.14:** Add and subtract fractions with unlike denominators.

Add given fractions with unlike denominators.

A incorrect fraction

B added numerators and denominators

C incorrect numerator, correct denominator

D correct

10 **N.FL.05.14:** Add and subtract fractions with unlike denominators.

Subtract given fractions with unlike denominators.

A correct

B correct denominator, but did not convert subtrahend

C correct denominator, but added in numerator

D subtracted numerators and denominators

11 **N.FL.05.18:** Solve contextual problems involving the addition and subtraction of fractions.

Identify the operation in the contextualized setting.

A subtracted

B subtracted

C correct

D multiplied

12 **N.FL.05.18:** Solve contextual problems involving the addition and subtraction of fractions.

Identify the operation in the contextualized setting.

A subtracted one subtrahend from another

B added subtrahends to each other

C correct

D added one subtrahend to total

13 **N.MR.05.19:** Solve contextual problems involving the addition and subtraction of fractions.

Add fractions in the same family, in context.

A correct

B added numerators and denominators

C addend

D multiplied numerators and denominators

14 **N.MR.05.19:** Solve contextual problems involving the addition and subtraction of fractions.

Add fractions from different families, in context.

A multiplied numerators and denominators

B multiplied numerators, added denominators

C added numerators and denominators

D correct

15 **M.PS.05.05:** Show relationships between areas of polygons.

Identify the rectangle with an area four times greater than the given triangle.

A rectangle with same area

B rectangle with twice the area

C rectangle with 4/3 the area

D correct

16 **M.PS.05.05:** Show relationships between areas of polygons.

Determine the relationship between areas of a given triangle and parallelogram.

A incorrect relationship

B incorrect relationship

C incorrect relationship

D correct

17 **G.GS.05.02:** Measure angles with a protractor and classify.

Measure the angle with a protractor and classify.

A correct

B incorrect classification of angle

C incorrect classification of angle

D incorrect classification of angle

18 **G.GS.05.02:** Measure angles with a protractor and classify.

Know the measure of a straight angle.

A incorrect measure

B incorrect measure

C correct

D incorrect measure

19 **G.GS.05.04:** Know straight angles and angles surrounding a point.

Know the measure of a straight angle.

A straight angle measures 260°

B straight angle measures 220°

C correct

D straight angle measures 130°

20 **G.GS.05.04:** Know straight angles and angles surrounding a point.

Identify the vertical angle.

A non-vertical angle

B correct

C non-vertical angle

D non-vertical angle

21 **G.GS.05.05:** Know straight angles and angles surrounding a point.

Determine the measure of an angle surrounding a point.

A sum of two other angles

B measure of adjacent angle

C correct

D 10° over

22 **G.GS.05.05:** Know straight angles and angles surrounding a point.

Determine the measure of the supplementary angle.

A measure of complementary angle

B correct

C incorrect angle

D straight angle measures 280°

23 **N.FL.05.20:** Solve applied problems with fractions and decimals.

Order a given list of times in hundredths of seconds from least to greatest.

A mixed order

B mixed order

C correct

D mixed order

24 **N.FL.05.20:** Solve applied problems with fractions and decimals.

Estimate the cost of three video games.

A estimate of cost of two games

B underestimate

C correct

D estimate of cost of four games

25 **N.FL.05.05:** Solve applied problems with the multiplication and division of wholes.

Solve an applied division problem with whole numbers.

A correct

B incorrect quotient

C incorrect quotient

D incorrect quotient

26 **N.FL.05.05:** Solve applied problems with the multiplication and division of wholes.

Solve the applied problem using division.

A incorrect quotient

B incorrect quotient

C correct

D remainder less than 0.5, rounded down despite context

27 **N.MR.05.07:** Find prime factorization between 1 and 50; show it exponentially.

Find the prime factorization in exponential notation.

A incorrect exponents

B incorrect exponents

C correct

D incorrect exponents

28 **N.MR.05.07:** Find prime factorization between 1 and 50; show it exponentially.

Find the prime factorization.

A correct

B factorization, but not prime factorization

C incorrect exponents

D incorrect exponents

29 **D.AN.05.03:** Find and interpret mean (fair share) and mode.

Find the mode of the given data set.

A correct

B not the mode

C approximate mean

D not the mode

30 **D.AN.05.03:** Find and interpret mean (fair share) and mode.

Find mean of the given data set.

A one of the modes

B one of the modes and the median

C correct

D neither the mean nor the mode

31 **M.TE.05.06:** Know and use the area formula for a triangle.

Determine the area for triangle, given the formula and a diagram.

A half of height × non-base side

B half of non-base side × non-base side

C correct

D measure of height + base

32 **M.TE.05.06:** Know and use the area formula for a triangle.

Determine the area for the triangle, given the formula and a diagram.

A measure of base + height

B correct

C base × height

D 2 × base × height

33 **M.TE.05.07:** Know how to use the area formula for a parallelogram.

Find the area of a parallelogram, given the formula and a diagram.

A measure of base + height

B correct

C base × length

D length × height

34 **M.TE.05.07:** Know how to use area formula for a parallelogram.

Find the area of a parallelogram, given the formula and a diagram.

A measure of base + height

B length × height

C correct

D base × length

35 **G.GS.05.06:** Know the interior angles of a triangle and quadrilateral.

Know the sum of the interior angles of the quadrilateral.

A incorrect total

B correct

C incorrect total

D incorrect total

36 **G.GS.05.06:** Know the interior angles of a triangle and quadrilateral.

Know the sum of the interior angles of the quadrilateral.

A incorrect total

B incorrect total

C incorrect total

D correct

37 **G.GS.05.07:** Find angles using the properties of shapes.

Find the measure of the fourth angle of a trapezoid, given the other three angles.

A correct

B given angle

C given angle

D given angle

38 **G.GS.05.07:** Find angles using the properties of shapes.

Find the measure of angle in a right triangle.

A correct

B given angle

C over by 10°

D right angle

39 **D.AN.05.04:** Solve multi-step problems involving means.

Determine the number to be added to a list to result in a given mean.

A given mean minus mean of list without adding value

B mean of list without adding value

C given mean

D correct

40 **D.RE.05.01:** Read and interpret line graphs; compare data.

Determine the change in temperature over a given time interval.

A correct

B total change in temperature

C starting temperature

D ending temperature

41 **D.RE.05.02:** Construct line graphs from tables of data.

Translate a table to a line graph.

A correct

B incorrect y-intercept, correct slope

C reversed order of numbers on y-axis and incorrect plotting

D reversed order of numbers on y-axis

42 **G.GS.05.03:** Identify angles on a straight line and vertical angles.

Identify the pair of vertical angles.

A adjacent angles

B correct

C adjacent angles

D adjacent angles

43 **G.TR.05.01:** Associate angles with turning.

Given a one-quarter turn, identify the corresponding angle.

A correct

B incorrect angle

C incorrect angle

D incorrect angle

44 **M.PS.05.10:** Solve applied problems about the volume of prisms.

Given the volume, length, and width of a prism, find the height.

A measure of volume ÷ width

B measure of volume ÷ length

C length + width

D correct

45 **M.UN.05.01:** Know the equivalence of 1 liter, 1000 milliliters, 1000 cubic centimeters.

Determine the equivalent to a measurement given in milliliters.

A correct

B incorrect number of cm^3

C incorrect number of liters

D incorrect number of cm^3

46 **M.UN.05.02:** Know the units of measure for volume and their abbreviations.

Select the unit of measure for volume.

A length

B area

C area

D correct

47 **M.UN.05.03:** Compare cubic inches to cubic feet, and cubic centimeters to cubic meters.

Determine the greatest volume in cubic inches or cubic feet.

A greatest measure

B least measurement

C neither greatest measurement nor least measurement

D correct

48 **N.FL.05.06:** Divide up to a 4-digit number by a 2-digit number.

Divide the 4-digit number by the 2-digit number.

A correct

B divisor

C incorrect quotient

D incorrect quotient

49 **N.ME.05.08:** Know relative magnitude of ones, tenths, hundredths.

Given a decimal in tenths, translate it to word form in hundredths.

A 0.a = a thousandths

B 0.a = a0 tenths

C correct

D 0.a = a hundredths

50 **N.ME.05.09:** Know percents as parts out of 100; use percent notation.

Translate the fraction to a percent.

A a/b = a.b%

B correct

C a/b = b%

D a/b = a0%

51 **N.ME.05.10:** Know fractions as statements of division.

Translate the fraction to a division statement in words.

A correct

B a/b means b divided by a

C a/b means a minus b

D a/b means b minus a

52 **N.ME.05.11:** Given two fractions, express them as equivalent fractions.

Select the equivalent fractions.

A non-equivalent fractions

B non-equivalent fractions

C correct

D non-equivalent fractions

53 **N.ME.05.12:** Find the product of two unit fractions using an area model.

Find product of the two unit fractions using the area model.

A factor

B factor

C 1/number of shaded squares in model

D correct

54 **N.ME.05.23:** Express ratios; find equivalent ratios.

Find the ratio, given a contextualized situation.

A used total, not complement, in denominator

B correct

C complement/total

D reciprocal

55 **N.MR.05.02:** Relate the division of wholes with remainders: $a = bq + r$.

Identify the equation that can be used to check the division expression.

A remainder greater than divisor

B remainder greater than divisor

C correct

D negative remainder

56 **N.MR.05.13:** Divide a fraction by a whole number.

Divide the whole number by the unit fraction.

A correct

B multiplied instead of divided

C $a \div 1/b = b \times 1/a$

D $a \div 1/b = 1/a \times 1/b$

57 **N.MR.05.15:** Multiply numbers by powers of 10.

Multiply a 2-digit number by 0.1.

A 1/100 correct answer

B 1/10 correct answer

C correct

D 10 times correct answer

58 **N.MR.05.17:** Multiply 1-digit and 2-digit numbers by decimals.

Multiply the 1-digit number by the decimal in hundredths.

A multiplied by wrong decimal, truncated hundredths

B correct

C incorrect product

D multiplied by tenths instead of hundredths

59 **N.MR.05.21:** Solve for unknowns in equations with fractions.

Solve for the unknown subtrahend in the equation.

A correct

B added numerators, denominators of minuend to difference

C minuend + difference

D correct numerator, incorrect denominator

60 **N.MR.05.22:** Express fractions and decimals as percentages.

Translate the decimal to a percentage.

A 0.ab = 0.ab%

B 0.ab = a.b%

C correct

D 0.ab = ab0%

4th

5th

6th

7th

8th

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